REMARKS

I The Pending Claims and the Amendments to the Claims

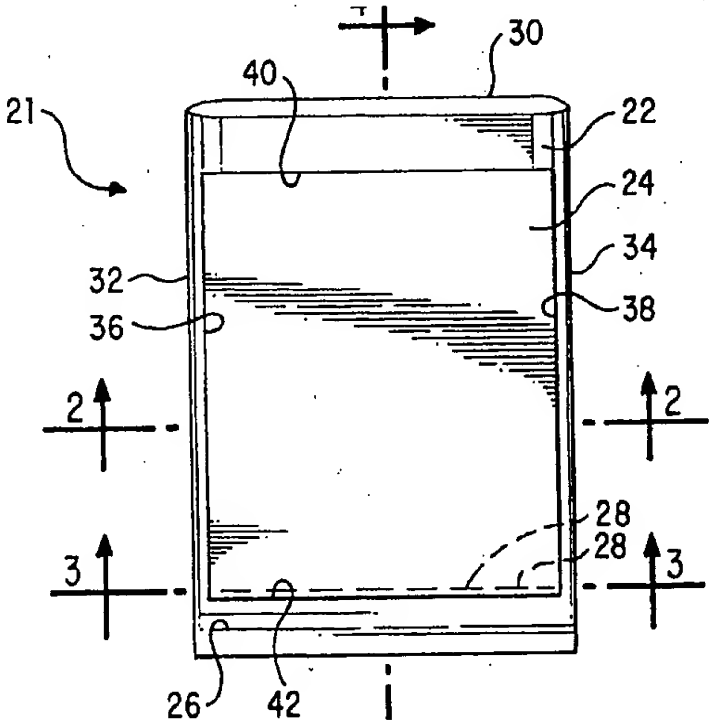
With the entry of the above amendments, Claims 1-23 remain pending, with Claims 1, 2, and 14 being the pending independent claims. Claim 1 is the only claim which is amended above. The amendment of Claim 1 is merely to delete the word "both", and is made in response to the §112 second paragraph rejection of Claim 1, and per the Examiner's implied suggestion that Claim 1 be amended in this manner. The amendment contains no new matter. Accordingly, Applicants respectfully request that the §112 rejection of Claim 1 be withdrawn.

II. The §102(b) Rejection of Claims 1-3 and 5-12 as Anticipated by BRADY et al

In Paragraph 6 of the 4 November Office Action, Claims 1-3 and 5-12, and 23 are again rejected under 35 USC 102(b) as anticipated by WO 96/00688, to Brady et al ("BRADY et al"). The 4 November Office Action, in making this rejection, states that BRADY et al discloses an end-seal patch bag comprising a tubular bag and a heat-shrinkable patch film which is adhered across the entire width of a first lay-flat side of the bag, with the patch being wider than the lay-flat side of the bag, and the bag having a continuous seal across the entire width of the bag at the bottom of the bag. The Office Action goes on to state that BRADY et al "...teach that it is well known in the art to seal through the patch as well as through the lay-flat sides of the bag, although the seal is weaker than a seal which is only made through the bag....", with the Office Action concluding that the aspect of the seal being through the patch and bag therefore reading on BRADY et al. The Office

Action goes on to again refer to the various portions of BRADY as disclosing various features recited in Applicants' Claim 2 , as well as Claims 3, 4, 5, 7, 8-9 and 11-12.

In response, Applicants contend that BRADY et al does not anticipate any one or more of Claims 1-3 or 5-12. Applicants note that the Office Action relies upon Page 19 lines 15-31 of BRADY et al, which is a description of the patch bag having supplemental seal in accordance with USPN 5,545,419, also to Brady et al (hereinafter "BRADY et al '419"). FIG. 1 of BRADY et al '419, provided immediately below, illustrates the presence of two seals, i.e., primary end seal 26 and supplemental end seal 28.



Thus, it is clear that BRADY et al '419, as well as Page 19 lines 15-31 of BRADY et al, both fail to disclose Applicants recitation in Claim 1 of "...the seal being the only seal across the bag...."

The only other portion of BRADY et al which the Office Action relies on for the teaching of sealing through the patch is Page 19 lines 8-14, about which the Office Action states:

> Brady et al teach that it is well-known in the art to seal through the patch as well as through the lay-flat sides of the bag, although the seal is weaker than a seal which is only made through the bag (page 19 lines 8-14); the claimed aspect of the seal being 'through the patch as well as through both lay-flat sides of the bag' therefore reads on Brady et al. [Paragraph 6 of 4 November Office Action.]

Page 19 lines 8-14 of BRADY et al, i.e., the portion of BRADY et al relied on in the paragraph immediately above, is as follows:

> Thus, over the length of bag 21 on which first patch 30 and second patch 32 are adhered, the full width of bag 21 is "covered" by the combination of patches 30 and 32, i.e., together, patches 30 and 32 constitute a "full width" coverage of bag 21. ***The two end portions of bag 20 are not covered by patches 30 and 32 in order that strong end seals can be made through bag 21, without having to seal through both of patches 30 and/or 32, which would be weaker than sealing through bag 21.*** [BRADY et al, Page 19, lines 8-14, emphasis added]

Contrary to the statements in the Office Action, Applicants contend that this portion of BRADY et al, taken in the context of BRADY et al as a whole, teaches away from sealing through the patch by teaching that sealing through the bag alone produces a stronger seal than sealing through the patch. That is, one of ordinary skill in the art, reading BRADY et al in its entirety, would not be taught or motivated to seal through the patch, because BRADY et al teaches that sealing through the patch produces a seal of inferior strength. One of skill in the art would have known that high seal strength is an important feature for a patch bag, as a weak seal can fail due to impact from a heavy meat

product being loaded into the bag, during shipping and handling, etc. As a result, Applicants contend that Page 19 lines 8-14 of BRADY et al teaches away from sealing through the patch.

Applicants point out that Claim 2, which is also included in this §102 rejection, recites the sealed bag as having a burst strength of at least 26 inches of water in a Linear Ramp Hot Burst Grease Test. Moreover, rejected Claims 3 and 4-12 depend, directly or indirectly, from Claim 2. The recited bag burst strength of at least 26 inches of water is a pressure-to-burst parameter. That is, the bag can maintain a pressure of up to 26 vertical inches of water without bursting. This means that the recited heat seal, which is through the patch, also has to be strong enough to allow up to 26 inches of water to be maintained inside the bag. Applicants have disclosed and claimed a particular process and apparatus which enables the heat seal to be strong enough to maintain this strength level. BRADY et al does not teach or suggest any sealing process which is inherently capable of enabling this seal strength. Moreover, BRADY et al goes so far as to admit that the seal made through the patch will be "weak", which is tantamount to disclosing that such a seal would not provide the patch bag with a high pressure-to-burst. As if that is not enough, Applicants' specification refers to the weakness of prior attempts to seal through the patch:

> It has been discovered that it is difficult to measure the seal strength of an intermittent secondary seal. It would be desirable to provide patch coverage down to the bottom seal of the bag, without having to make a supplemental seal and without having to settle for a seal of inferior strength, i.e., compared with a seal made through only the bag film. It has been discovered that a seal can be made through both the patches and the bag, the seal having a strength which is substantially equivalent to the strength of a seal through the bag alone, or even superior to the strength of a seal through the bag alone. ***In the past, a through-bag-and-patch seal strength of only about 16 to 20 inches of water was obtained, measured via a Standard Linear Ramped Hot Burst Grease Test, described below. However, using the apparatus and process which***

> ***Applicants' have discovered, surprisingly a through-bag-and-patch seal strength of from at least about 24 up to at least about 48 inches of water has been achieved, using the same test for seal strength.*** [Applicants' specification , Page 1 lines 21-32, emphasis added.]

The above excerpt from Applicants' specification states that prior efforts to seal through the patch have not been able to achieve the seal strength Applicants have achieved using the apparatus and process of the present invention. It should be noted that Applicants' application is assigned to Cryovac, Inc., which is the assignee of BRADY et al as well as BRADY et al '419. This is important because Applicants are well aware of the patch bags of both BRADY et al as well as BRADY et al '419, and the above excerpt from Page 1 lines 21-32 was made (and sworn to) based on knowledge of the strength of the supplemental seal of BRADY et al '419, the preferred embodiment of which was available to Applicants for purposes of comparison, including comparison of seal strength. Thus, BRADY et al would not have provided one of ordinary skill in the art with a means for obtaining a through-the-patch seal having the strength recited in Applicants' Claim 2. As a result, Applicants contend that Claim 2, and all claims depending therefrom, are not anticipated by BRADY et al.

III. The Rejection of Claim 13 as Obvious over BRADY et al

In Paragraph 8 of the 4 November Office Action, Claim 13 is rejected as unpatentable over BRADY et al. The Office Action states that BRADY et al fails to disclose a bag having a seal width of from 0.015 to 0.25 inches, but that BRADY et al discloses a bag in which the seal has a width less than 13 to 17 inches, and that the width

of the seal would be readily determined through routine optimization by one of ordinary skill in the art, depending upon the desired result.

In response, Applicants contend that Claim 13 is patentable over BRADY et al for at least the reasons that Clams 1 and 2 are patentable over BRADY et al, and for the additional reason that the statements in the Office Action refer to the *length* of the seal in BRADY et al, whereas Claim 14 recites the *width* of the seal. More particularly, the "width of less than 13-17 inches" is clearly the width of the bag, which corresponds with the length of the seal, not the width of the seal. The Office Action fails to refer to any specific portion of BRADY et al which teaches or suggests the recited seal width of 0.015 to 0.25 inches.

IV. The Rejection of Claim 4 as Obvious over BRADY et al in view of HERRINGTON

In Paragraph 9 of the 4 November Office Action, Claim 4 is rejected as unpatentable over BRADY et al in view of U.S. Patent No. 4,561,109, to Herrington ("HERRINGTON"). The Office Action states that BRADY et al discloses a heat-sealed bag but fails to disclose the bag as having a folded bottom, but that HERRINGTON discloses the use of a folded bottom in a heat sealed bag for the purpose of forming a pouch shape.

In response, Applicants first note that since the side seal patch bag illustrated in Figures 8, 9, and 10 of BRADY et al has a folded bottom, HERRINGTON is rendered unnecessary and redundant as a reference. However, Applicants contend that Claim 4 is

patentable over BRADY et al as well as BRADY et al in view of HERRINGTON, for at least the reasons that Claims 1 and 2 are patentable over BRADY et al, as set forth in response to the §102 rejection discussed above.

V. The Rejection of Claims 14-15, 17, and 19-22 as Obvious over BRADY et al in view of SAMSON

In Paragraph 10 of the 4 November Office Action, Claims 14-15, 17, and 19-22 are rejected as unpatentable over BRADY et al in view of U.S. Patent No. 3,616,004, to Samson ("SAMSON"). The Office Action states that BRADY et al discloses a process for making a patch bag by adhering first and second patches to the outside surface of a lay-flat tubing with both patches having a width greater than the width of the tubing, sealing an inside surface of the film tubing to itself by applying heat to each of the patch outside surfaces, and cutting across the tubing...but that BRADY et al fails to disclose heat applied by a first and second means for heating, which means are in alignment with one another, with the patches and bag tubing being therebetween during sealing. The Office Action goes on to state that SAMSON teaches a method of sealing films comprising applying heat by first and second heating means which are in alignment with one another, for the purpose of sealing films with strength and uniformity. The Office Action then states that on this basis it would have been obvious to one of ordinary skill in the art to have modified BRADY et al by provided first and second means for heating in alignment with one another, in order to produce a seal with strength and uniformity, as taught by SAMSON.

In response, Applicants continue to maintain that Claims 14-15, 17, and 19-22 are patentable over BRADY et al in view of SAMSON. In BRADY et al, both the bag film and the patch film are primarily ethylene-based resins, such as linear low density polyethylene (i.e., LLDPE), ethylene/vinyl acetate copolymer (i.e., EVA), and ethylene/butyl acrylate copolymer (EBA), which have melting points not altogether different from one another. However, in SAMSON, the sealing method and apparatus employed, including the use of upper jaw 3 and lower jaw 4, is for the purpose of making a "particularly uniform and high strength seal" (SAMSON Col. 1 lines 29-31) of films which are "...***each built up of two or more alternating layers of different thermoplastic component polymers having different softening points***" (SAMSON Col. 1 lines 7-9, emphasis added). More particularly, SAMSON discloses a method for sealing multilayer films having successive layers that are virtually immiscible with each other...such as alternating layers of polyethylene and polyamide. (SAMSON Col. 1 lines 50-55) so that "...two or more layers of the highest melting polymeric component are fused together to provide a particularly uniform and high strength seal." (SAMSON Col. 1 lines 29-32). Even more particularly, SAMSON teaches a method in which the films are first heated to a first temperature which is at least the softening point of the lowest melting component but lower than the softening point of the highest melting component, followed by heating the film to a temperature which is at least equal to the softening point of the highest melting component, in order to fuse together the layers having containing the polymer having the highest melting point. See Claim 1 of SAMSON sets forth this process, as follows:

> 1. A method for sealing at least two multilayer polymeric films by the application of heat and pressure, said films each being built up of two or more alternating layers of different thermoplastic component polymers

> having different softening points, which comprises applying pressure to at least two of the multilayer films arranged to be sealed together in a sealing area, simultaneously heating the films in said area to a first temperature which is at least equal to the softening point of the lowest melting component but lower than the softening point of the highest melting component, and then heating the films in the sealing area to a second temperature which is at least equal to the softening point of the highest melting component, whereby said layers of the highest melting component are fused together to provide a seal between the films. [Claim 1 of SAMSON, i.e., Col. 3 lines 13-26]

In addition, the specification of SAMSON states that the strong seal is made by first heating to the softening point of the lowest melting component while maintaining a high pressure, and thereafter raising the temperature of the seal bars to the softening point of the highest melting component, while lowering the pressure, so that the layers containing the higher melting polymer are fused to one another in the seal area:

> Heretofore, it has been found that the sealing of two polymeric multilayer films by the methods usually employed for monolayer films generally leads to seals of insufficient strength and uniformity.
>
> Advantageously, the present invention provides a method of sealing multilayer polymeric films which does not have these drawbacks.
>
> Thus, this invention contemplates a method for sealing multilayer polymeric films in which at the sealing area, the multilayer films, which are kept under an initial pressure, are first heated to a temperature that is at least equal to the softening point of the lowest melting polymeric component, but lower than the softening point of the highest melting polymeric component of the films, and the films are only then heated to a temperature which is at least equal to the softening point of the highest melting polymeric component.
>
> It has surprisingly been found that in this way, two or more layers of the highest melting polymeric component are fused together to provide a particularly uniform and high strength seal. According to the invention, when the pressure during the first heating step is kept sufficiently high, i.e., higher than 100 kg./cm^2, but preferably between 300 and 1,800 kg./cm^2, then a seal is obtained that has a strength equal to or

greater than that obtained with comparable monolayer films.

According to the invention especially favorable results are obtained when during the second heating step at a higher temperature the pressure applied to the sealing area is kept considerably lower than that applied during the first heating step. It is preferred that during the second heating step the pressure applied to the sealing area should be about 2 to 8 kg./cm^2. [SAMSON, Col. 1, lines 19-42]

Thus, one of skill in the art would recognize upon reading SAMSON that the reason for sealing together the layers containing the highest melting polymer is to obtain a seal of greater strength than would be obtained if the lower melting polymer is bonded together to make the seal. Thus, one of ordinary skill in the art would have read SAMSON in its entirety and would have seen that the objective of SAMSON is obtaining a high strength seal by sealing together the layers containing the high melt point polymers after the lower melt point polymers have been melted and forced out of the seal area. As a result, one of skill in the art would not have been motivated to apply the method or apparatus of SAMSON to producing a through-the-patch seal of a patch bag of BRADY et al, because neither the patch film nor the bag film in BRADY et al contain alternating layers of high and low melting point polymers. Both the bag and patch films of BRADY et al are primarily olefin-based, and as such have layers which are of relatively low melting points. Use of the apparatus plus temperature and pressure program of SAMSON (see FIG. 1 of SAMSON) would result in burning through the entire bag and patch structure of BRADY et al, as neither the patch film nor the bag films contains any substantial quantity of a high melting component. Again, the method and apparatus of SAMSON are specifically designed to exclude the low melting point polymer from the seal area. As such, it is clear that one of ordinary skill in the art would not have

had any motivation to utilize the apparatus and process of SAMSON to make a through-the-patch-and-bag seal in accordance with Applicants' process Claims 14-15, 17, and 19-22. As a result, Applicants continue to maintain that the Office Action fails to make out a prima facie case of obviousness of any one or more of Claims 14-15, 17, and 19-22 as unpatentable over BRADY et al in view of SAMSON.

VI. The Rejection of Claims 16, 18, and 21-23 as Obvious over BRADY et al in view of SAMSON and further in view of SHABRAM

In Paragraph 11 of the 4 November Office Action, Claims 16, 18, and 21-23 are rejected as unpatentable over BRADY et al in view of SAMSON, further in view of U.S. Patent No. 3,340,776, to Shabram ("SHABRAM"). The Office Action relies on BRADY et al and SAMSON as discussed above, and states that BRADY et al and SAMSON both fail to disclose seal bars having a convex surface and seal bars which comprise nichrome, but that SHABRAM teaches the use of a convex surface for the purpose of making a seal bar having simplified construction, with nichrome wire as the heating element for the purpose of heating electrically. The Office Action states that on the basis of these facts it can be concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided for a convex surface in BRADY et al and SAMSON in order to make a seal bar of simplified construction, and further that it would have been obvious to have provided nichrome wire in order to heat electrically.

In response, Applicants contend that Claims 16, 18, and 21-23 are patentable over BRADY et al in view of SAMSON further in view of SHABRAM. Applicants point to the arguments for the patentability of Claims 14 and 15, above. Applicants contend that these arguments apply equally to each of Claims 16, 18, and 21-23.

Turning specifically to Claim 16, Applicants further contend that those portions of SHABRAM to which the Office Action refers, i.e., Column 4 lines 25-35 of SHABRAM and Column 4 lines 2-24 of SHABRAM, do not appear to disclose a seal bar having a convex surface. See the sentence spanning Page 17-18 of Applicants' Amendment under §111 accompanying the Request for Continuing Examination filed 9 October 2003. As the subsequent Office Action of 4 November 2003 also fails to point out the particular location of SHABRAM which teaches a seal bar having a convex surface, Applicants contend that the Office Action fails to make out a prima facie case of obviousness of Claim 16. Applicants also note that neither the "electrically insulated arms 128" of Col. 4 line 4 of SHABRAM, nor the "ribbon 130" referred to in Col. 4 line 5 of SHABRAM, both of which are illustrated in FIG. 8 of SHABRAM, appear to have a convex surface.

As to the patentability of Claims 21 and 22, which recite the seal bars as exerting a pressure of 50-150 psi (Claim 21) and the seal bars as having an average temperature of from 180-400°F (Claim 22), Applicants note that the rejection refers to the 2-8 kg/cm^2 pressure of the seal bars of SAMSON and the 220°C seal temperature of the seal area of the film of SAMSON, with the Office Action stating that it would have been obvious to one of skill in the art to optimize the pressure and temperature of SAMSON to arrive at Applicants' recited pressure and temperature of Claims 21 and 22, respectively. Applicants continue to maintain that one of ordinary skill would not have relied on SAMSON for the pressure and temperature employed to seal through the bag and patch of BRADY et al, and would not have "optimized" the SAMSON pressure and temperature, because there is no motivation to utilize the sealing apparatus and method of SAMSON because of the

distinct difference between the film being sealed by SAMSON and the patch and bag films of BRADY et al. This same reason also applies to the patentability of Claim 23, which recites monitoring and controlling the voltage and current flowing through the sealing bars to achieve the temperature recited in Claim 22.

Based on all of the arguments set forth above, Applicants contend that Claims 16, 18, and 21-23 are patentable over BRADY et al in view of SAMSON further in view of SHABRAM.

VII. Conclusion

Reconsideration of the patentability of the pending claims is respectfully requested, with a view towards allowance based on the amendments and remarks set forth above. Should there be any questions or comments, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully Submitted,

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9 October 2003

> In the event that a continuous laminate of the "bag film" and the "patch film" is converted into a bag by sealing through the entire laminate, e.g., to result in the patch as illustrated in Figures 11 and 12, described in detail below, it is believed that such a process results in a patch bag inferior to the bag as illustrated in Figures 1 and 2, because seals made through the patch film can result in burn through, as well as weaker seals. [BRADY et al, Page 30 lines 8-13]
>
> In this manner, side seals 208 and 210 can be made through the bag film alone, without being made through the patch films, which, as stated above, results in a

> weaker seal than seals made through the bag film alone. [BRADY et al, Page 30 lines 26-29]

Applicants contend that the above passages from BRADY et al stand as evidence that BRADY et al does not teach or suggest a through-the-patch seal which would allow the resulting patch bag to have a burst strength of at least 26 inches of water. That is, BRADY et al has no teaching of sealing through the patch to make a strong seal either across the bag (e.g., to make an end-seal bag) or along the length of the bag (e.g., to make a side-seal bag), both of which are within the scope of Applicants' Claim 2. The "supplemental seal" disclosed on Page 19 lines 15-31 of BRADY et al is not designed to be a strong seal, but rather is simply designed to keep the bone-in meat product from entering that region of the bag which is not covered by the patch, i.e., where the end-seal is. One of skill in the art would take from the above excerpts from BRADY et al that the supplemental seal would not provide the patch bag with a burst strength of at least 26 inches of water. Moreover, the failure of the supplemental seal, without more, would not result in the bursting of the bag. Thus, the strength of the supplemental seal does not affect the burst strength of the patch bag having the supplemental seal, as the supplemental seal is inward of the end seal which is across the bottom of the bag. For these reasons, patch bag Claims 2, 3, and 5-12 are patentable over BRADY et al. Moreover, for these reasons patch bag Claims 4 and 13 are also patentable over BRADY et al alone or in combination with other documents relied on in previous office actions.

VII. Conclusion

Reconsideration of the patentability of the pending claims is respectfully requested, with a view towards allowance based on the amendments and remarks set forth above. Should there be any questions or comments, the Examiner is invited to contact the undersigned at the telephone number provided below.

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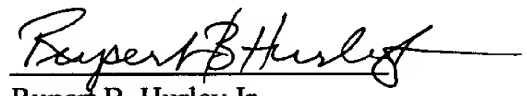

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